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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/595,640	05/02/2006	Toshihide Tsubata	70404.90/ma	3891
	7590 02/05/2008 ISHIKI KAISHA	3,	EXAM	INER
C/O KEATING & BENNETT, LLP		·	TAYLOR, EARL N	
8180 GREENS SUITE 850	BORO DRIVE		ART UNIT	PAPER NUMBER
MCLEAN, VA 22102			2818	
			NOTIFICATION DATE	DELIVERY MODE
			02/05/2008	ELECTRONIC

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Notice of the Office communication was sent electronically on above-indicated "Notification Date" to the following e-mail address(es):

JKEATING@KBIPLAW.COM uspto@kbiplaw.com

		Application No.	Applicant(s)			
Office Action Summary		10/595,640	TSUBATA ET AL.			
		Examiner	Art Unit			
		EARL N. TAYLOR	2818			
	The MAILING DATE of this communication appears on the cover sheet with the correspondence address					
Period for	RTENED STATUTORY PERIOD FOR REPLY	IS SET TO EXPIRE 3 MONTH/	S) OR THIRTY (30) DAYS			
WHICH - Extension after SI - If NO poin - Failure Any rep	IEVER IS LONGER, FROM THE MAILING DA ons of time may be available under the provisions of 37 CFR 1.13 X (6) MONTHS from the mailing date of this communication. eriod for reply is specified above, the maximum statutory period w to reply within the set or extended period for reply will, by statute, bly received by the Office later than three months after the mailing patent term adjustment. See 37 CFR 1.704(b).	ATE OF THIS COMMUNICATION 16(a). In no event, however, may a reply be tin 11 apply and will expire SIX (6) MONTHS from cause the application to become ABANDONE	N. nely filed the mailing date of this communication. D (35 U.S.C. § 133).			
Status						
1)⊠ F	Responsive to communication(s) filed on 23 No.	ovember 2007.	•			
,	This action is FINAL . 2b) This action is non-final.					
	, — · · · ·					
С	closed in accordance with the practice under Ex parte Quayle, 1935 C.D. 11, 453 O.G. 213.					
Dispositio	n of Claims					
4)⊠ C	Claim(s) <u>1-3,5 and 8</u> is/are pending in the appli	cation.				
48	4a) Of the above claim(s) is/are withdrawn from consideration.					
•	Claim(s) is/are allowed.					
•	Claim(s) <u>1-3,5 and 8</u> is/are rejected.					
•	Claim(s) is/are objected to. Claim(s) are subject to restriction and/or	r election requirement				
8)□ C	are subject to restriction and of	election requirement.				
Applicatio	n Papers					
	he specification is objected to by the Examine					
	he drawing(s) filed on is/are: a)☐ acce					
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).						
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d). 11) The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.						
Priority un	nder 35 U.S.C. § 119					
12) Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f). a) All b) Some * c) None of:						
1. Certified copies of the priority documents have been received.						
2. Certified copies of the priority documents have been received in Application No						
3. Copies of the certified copies of the priority documents have been received in this National Stage						
application from the International Bureau (PCT Rule 17.2(a)). * See the attached detailed Office action for a list of the certified copies not received.						
. Se	ee the attached detailed Office action for a list	or the certified copies not receive	su.			
Attachment(∧ □ I==== (== 2 ===	(PTO 412)			
	of References Cited (PTO-892) of Draftsperson's Patent Drawing Review (PTO-948)	4) Interview Summary Paper No(s)/Mail D	ate			
3) 🛛 Inform	ation Disclosure Statement(s) (PTO/SB/08) No(s)/Mail Date <u>1/23/08</u> .	5) Notice of Informal F 6) Other:	Patent Application			

DETAILED ACTION

Response to Arguments

Applicant's arguments filed 21 November 2007 have been fully considered but they are not persuasive. The applicant states "similar to the present invention, the gate insulating film 3 and the semiconductor film 4 are formed in that order after the reaction chamber is cleaned, such that the semiconductor film 4 of Shimizu is disposed on the gate insulating film 3. Since the gate insulating film 3 of Shimizu is formed first, the fluorine remaining in the reaction chamber after cleaning is caught in the gate insulating film 3, not in the semiconductor film 4." The applicant appears to state that fluorine is inherently produced in a cleaning step of the CVD chamber. Shimizu does not do this cleaning step and therefore no fluorine is produced. The applicant is invited to specifically point out in the disclosure of the Shimizu reference where this cleaning step occurs.

Information Disclosure Statement

This office acknowledges receipt of the following items from the applicant:

Information Disclosure Statement (IDS) filed on 23 January 2008. The references cited on the PTOL 1449 form have been considered.

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless -

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

Claims 1-8 are rejected under 35 U.S.C. 102(b) as anticipated by Shimizu (U.S. Patent 5,834,345) or, in the alternative, under 35 U.S.C. 103(a) as obvious over Shimizu (U.S. Patent 5,834,345) in view of Robertson (EP 1154036A1).

Referring to Claim 1, Shimizu teaches a transistor comprising: a source electrode and a drain electrode (7 and 8) arranged in mutually opposing relation; a semiconductor film comprising at least one layer (4) disposed between the source electrode and the drain electrode (7 and 8); a gate electrode (2) disposed in adjacent relation to the semiconductor film (4); and a gate insulating film (3) disposed between the gate electrode (2) and each of the source electrode, the drain electrode, (7 and 8) and the semiconductor film (4), the transistor is of an inverted stagger type in which the gate insulating film (3) and the semiconductor film (4) are formed in that order and the

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semiconductor film (4) is disposed on the gate insulating film (3); and the gate insulating film (3) is an amorphous silicon nitride film (Col. 3, Lines 55-65); wherein gate insulating film (3) does not contain a concentration of fluorine, meaning the concentration of fluorine is zero because no cleaning step using fluorine is performed which anticipates the range of 1 x 10^{20} atoms/cm³ or less and the range of 1 x 10^{19} atoms/cm³ or less.

Assuming arguendo, if one were to interpret the reference so narrowly such that a cleaning step producing fluorine residue or particulates in the subsequent CVD of the amorphous silicon nitride gate insulating film is inherent as argued in applicant's remarks filed on 21 November 2007 at page 5, last paragraph it would be rejected as unpatentable over Shimizu in view of Robertson et al. (EP 1154036 A1). Shimizu teaches a transistor comprising: a source electrode and a drain electrode (7 and 8) arranged in mutually opposing relation; a semiconductor film comprising at least one layer (4) disposed between the source electrode and the drain electrode (7 and 8); a gate electrode (2) disposed in adjacent relation to the semiconductor film (4); and a gate insulating film (3) disposed between the gate electrode (2) and each of the source electrode, the drain electrode, (7 and 8) and the semiconductor film (4), the transistor is of an inverted stagger type in which the gate insulating film (3) and the semiconductor film (4) are formed in that order and the semiconductor film (4) is disposed on the gate insulating film (3); and the gate insulating film (3) is an amorphous silicon nitride film (Col. 3, Lines 55-65); but does not teach wherein a cleaning step is performed using fluorine and then the fluorine residue and particulates are removed such that the gate insulating film (3) does not contain a concentration of fluorine or that the concentration

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of fluorine is 1 x 10²⁰ atoms/cm³ or less or 1 x 10¹⁹ atoms/cm³ or less. Robertson teaches cleaning the CVD chamber using fluorine and thereafter completely removing fluorine residue and particulates from the CVD chamber (par. 5-11 and 23). Therefore it would have been obvious to one having ordinary skill in the art at the time the invention was made to clean the CVD apparatus of Shimizu with the method taught by Robertson thus removing fluorine from being present in the amorphous silicon nitride in order to prevent the threshold of devices from shifting and to prevent substrate damage (par. 5-11 and 23).

Referring to Claim 3, Shimizu further teaches wherein the transistor is of a field-effect type (Col. 1, Lines 6-10).

Referring to Claim 5, Shimizu teaches all of the limitations of Claim 1, wherein the gate insulating film (3) is deposited by a CVD method (Col. 3, Lines 55-65). Furthermore, the language, term, or phrase "the gate insulating film is deposited by a CVD method", is directed towards the process of of depositing a film. It is well settled that "product by process" limitations in claims drawn to structure are directed to the product, *per se*, no matter how actually made. *In re Hirao*, 190 USPQ 15 at 17 (footnote 3). See also, *In re Brown*, 173 USPQ 685; *In re Luck*, 177 USPQ 523; *In re Fessmann*, 180 USPQ 324; *In re Avery*, 186 USPQ 161; *In re Wethheim*, 191 USPQ 90 (209 USPQ 554 does not deal with this issue); *In re Marosi et al.*, 218 USPQ 289; and particularly *In re Thorpe*, 227 USPQ 964, all of which make it clear that it is the patentability of the final product *per se* which must be determined in a "product by process" claim, and not the patentability of the process, and that an old or obvious product produced by a new

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method is not patentable as a product, whether claimed in "product by process" claims or otherwise. The above case law further makes clear that applicant has the burden of showing that the method language necessarily produces a structural difference.

As such, the claim language only requires a gate insulating film, which does not distinguish the invention from Shimizu, who teaches the structure as claimed.

Referring to Claim 8, Shimizu teaches all of the limitations of Claim 1 wherein a liquid crystal display device comprising the transistor of claim 1 as a switching element for a pixel electrode portion (Col. 1, Lines 6-10).

Conclusion

Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

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Telephone / Fax Information

Any inquiry concerning this communication or earlier communications from the

examiner should be directed to Earl N. Taylor whose telephone number is (571) 272-

8894. The examiner can normally be reached on Monday-Friday from 8:30AM-5:00PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's

supervisor, Steven Loke can be reached on (571) 272-1657. The fax phone number for

the organization where this application or proceeding is assigned is (571) 273-8300.

Information regarding the status of an application may be obtained from the

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Examiner: Earl N. Taylor